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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,677	08/05/2003	Markus Altmann	TRW(AEC)6687	7168
26294	7590	07/15/2004	EXAMINER	
TAROLLI, SUNDHEIM, COVELL & TUMMINO L.L.P. 526 SUPERIOR AVENUE, SUITE 1111 CLEVEVLAND, OH 44114			SCOTT, JAMES R	
			ART UNIT	PAPER NUMBER
			2832	

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/634,677	Applicant(s) ALTMANN, MARKUS	
	Examiner James R Scott	Art Unit 2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 8/05/03, 9/22/03, 10/6/03 AND 12/22/03.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                                        |                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09222003 (SEE #6)</u> . | 6) <input checked="" type="checkbox"/> Other: <u>10062003</u> .                         |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

The drawings are objected to by the Examiner under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the stop members (claims 3 and 4) shared operating surface (claim 5) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of

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any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to by the Examiner because of the following informalities: No figure legends 1a, 2a, 3a are present in the drawing figures legends. The numerals 1,2 and 3 are used. Correct either the drawings to include the alphanumeric designation or correct the brief description of the drawings by eliminating —a—after each numeral noting page 3, lines 1-3. The latter is suggested. However, if the drawings are corrected to eliminate the informalities, applicant must follow the procedures set forth in the preceding paragraph.

### ***Specification***

The disclosure is objected to because of the following informalities:

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.

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- (1) Field of the Invention.
- (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

On page 3 in lines 1-3, correct the figure designation if the figure legend in the drawing remaining unchanged. The sentences are incomplete. Amend by inserting a verb in each sentence. The detailed description of the invention does not refer to the stop members and their location. This likewise applies to the brief description stated on page 2 of the specification. Any other errors applicant may become aware of should be corrected.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1 the word means is not properly used. Cancel the phraseology --means of--. The claim 1 fails to clearly state how the contact actuator tappets are movably guided in the housing. The housing structure or

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configuration is not clearly described. Furthermore, the claim fails to specifically refer to the environment in which the switch is used. Note the phraseology Noting claim 2 it is not clear if the switch housing guide walls have any functional relationship with the actuation tappets. Claims 3 and 4 do not clearly describe the location of the stop members. Is applicant referring to the non-depressed actuation tappets being held in their vertical most upward position by the resilient switch mat portion of the keypad assembly? What is the shared operating surface referred to in claim 5? Is applicant attempting to refer to the common operating surface referred to in claim 1? Claims 6-8 are indefinite for the same reasons as claim 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 - 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kidd et al. (US 4,638,131) in view of the United Kingdom patent document GB 2, 353, 762(hereinafter referred to as Rush) and further considered with Frohne et al (US 6680450 B2).

Kidd et al. disclose a multifunctional pushbutton switch with a plurality of pushbutton switching units (60) that have pushbutton surfaces located close to each other in a common operating surface, comprising:

a switch housing (34) in which the actuation tappets (80)

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of the pushbutton switching units move within guide bosses 40,  
a cap (56) mounted over each of the actuation tappets, the cap having  
rigid frame (58) with recessed windows (68), each corresponding  
to the shape and size of the pushbutton.

Regarding Claim 1, Kidd et al. disclose the instant claimed invention except for a  
membrane. Noting Rush (Figures 1 and 2) he discloses a pushbutton switch with a cap,  
the cap made from a flexible silicone membrane 23. It would have been obvious to one  
having ordinary skill in the art at the time the invention was made to provide a flexible  
membrane on the top of the rigid frame of Kidd et al., as suggested by  
Rush, in order to prevent dirt from contaminating the interior of the switch.

The limitation "two-component injection molding technique" constitutes a  
process step limitation in an article claim and does not carry patentable weight, unless  
the process step limitation results in a materially different article. This is evidenced by  
Frohne et al who teaches that it is old to use the two-component injection molding  
technique noting column 2, lines 20-42 and claim 4.

Regarding Claim 2, the shape of the support structure; namely, guide walls of the  
switch housing is a matter of design choice and will depend on design parameters, such  
as, shape and layout of pushbuttons and does not preclude extending all of the way to  
the inner surface of the silicone membrane between the actuation tappets.

Regarding Claims 3 and 4, since the resilience of switch membrane (26) of Kidd  
et al. presses away from the circuit board 20, for the pushbutton switch of Kidd et al. as  
modified by Rush, the actuation tappets are resiliently pressed against the



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inner surface of the silicon membrane. The stop members of the actuation tappets include the lower surfaces of the actuation tappets including the bottom surface engaging the non-deflected dome of the keypad in the non actuated position at each key site.

Noting Claim 5, the operating surface is disclosed as a generally convex shape (Kidd et al., Figure 5).

Considering claim 6, Rush teaches use of convex or divot (concave) surface for the tappet (GB patent 2, 353, 762, page 5, lines 15-18). This claim limitation describes nothing more than a well known structural relationship pertaining to tactile feel.

Regarding Claims 7 and 8, it would have been obvious to provide adhesive or bonding material between the resilient membrane and the support structure, so as to seal the joint between the resilient membrane and the support structure. Kidd et al. already disclose side flanges, and therefore, it would have been obvious to provide the resilient membrane over the side flanges thereby providing silicon membrane behind the outer circumference of the plastic frame using a two-component injection molding technique as suggested by Frohne et al.

#### Cited References

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art is cited by the Applicant: Nopper et al, Hayes-Parkhurst et al, Goodson and Lynn et al disclose the use of a flexible outer layer used in membrane or pushbutton actuated switches. The closest U.S. patent cited by



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applicant is Lynn et al who has a rigid housing part made of plastics material and a flexible membrane which is configured to conform to the dome shape of the pushbuttons guided within each of the housing part apertures and the flexible membrane being joined to the upper surface of the housing part by interbonding material commonly known as an adhesive layer. The sole PCT, two United Kingdom, sole European and ten German patent documents constitute prior art cited by the applicant pertaining to

Switch assemblies including a hermetic sealed environment not precluding the use injection molding techniques.

Schmon et al is cited by the Examiner for disclosing a multifunctional pushbutton switch. It is noted that the claim 1 of the publication has substantially the same scope as claim 1 of this IFW application. Maintain a clear line of demarcation between any related applications.

#### Summary

Claims 1-8 are rejected.

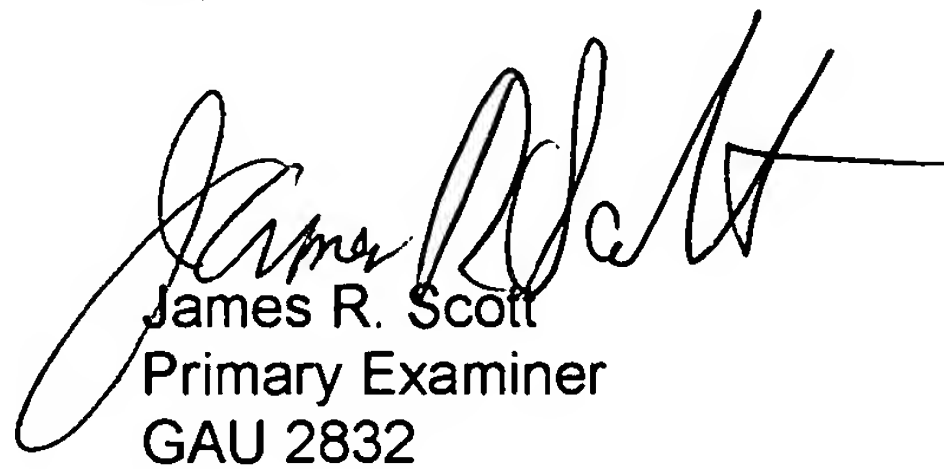
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James R Scott whose telephone number is 571-272-1999. The examiner can normally be reached on any workday between 1-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRScott: jrs  
7/08/2004



James R. Scott  
Primary Examiner  
GAU 2832